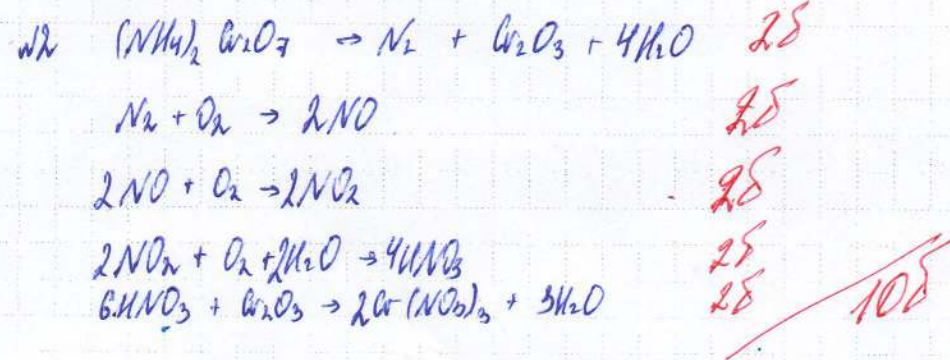
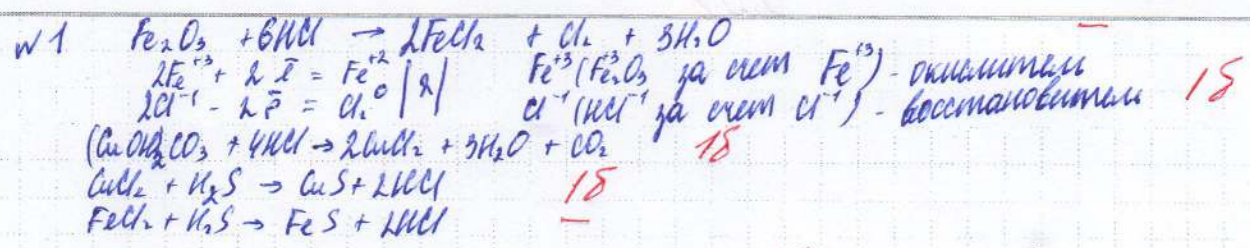


Бланк ответов



Класс 11 Аудитория Название предмета ХИМИЯ Дата проведения (дд-мм-гг) 19 - 11 - 19

Лист № Шифр X-11-4



$$\text{w4} \quad \text{Дано:} \quad \rho = 35,2\% \quad \text{Решение}$$

$$\rho = 1,18 \text{ г/мл} \quad \text{MnO}_2 + 4\text{HCl} \rightarrow \text{MnCl}_2 + \text{Cl}_2 + 2\text{H}_2\text{O}$$

$$M_{\text{Me}} = 24 \quad \text{Me} + \text{Cl}_2 \rightarrow \text{MeCl}_2$$

$$M_{\text{MeS}} = 36 \quad \text{MeCl}_2 + \text{H}_2\text{S} \rightarrow \text{MeS} + 2\text{HCl}$$

Найти: $M_{\text{MeO}_2} - ?$
 $V_{\text{HCl}} - ?$
 $\text{Me} - ?$

Пусть $M_{\text{Me}} = x$ $\rho_{\text{Me}} = \rho_{\text{MeCl}_2}$ $\rho_{\text{MeCl}_2} = \rho_{\text{MeS}}$, то

$$\rho_{\text{Me}} = \rho_{\text{MeS}} \quad \frac{24}{x} = \frac{36}{x+32} \quad \rho = \frac{m}{V}$$

$$36x = 24(x+32)$$

$$36x = 24x + 768$$

$$12x = 768$$

$$x = 64 (\text{Cu})$$

$$\text{Cu} + \text{Cl}_2 \rightarrow \text{CuCl}_2$$

$$\text{CuCl}_2 + \text{H}_2\text{S} \rightarrow \text{CuS} + 2\text{HCl}$$

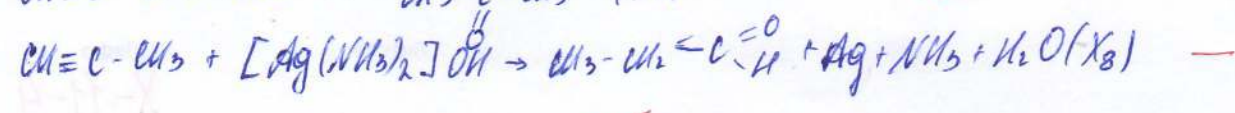
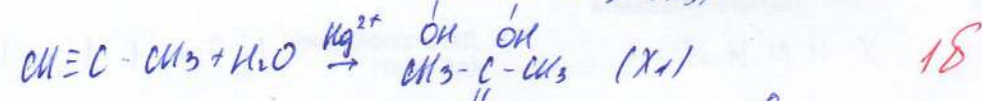
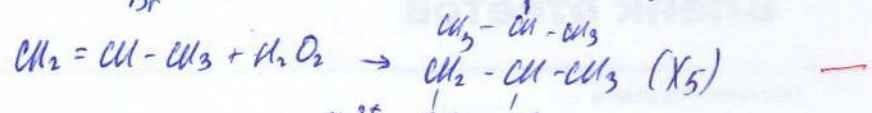
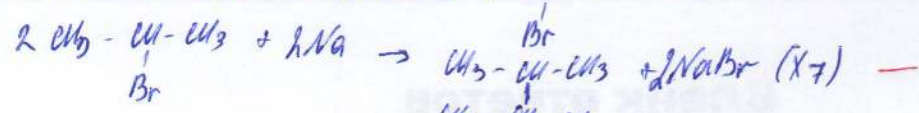
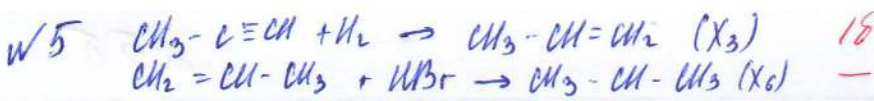
$$\rho_{\text{Cu}} = \frac{24}{64} = 0,375 \text{ моль} \quad \rho_{\text{Cl}_2} = \rho_{\text{Cl}_2} = 0,375 \text{ моль}$$

$$\rho_{\text{Cl}_2} = \rho_{\text{MnO}_2} = 0,375 \text{ моль} \quad \rho_{\text{HCl}} = 4\rho_{\text{Cl}_2} = 4 \cdot 0,375 = 1,5 \text{ моль}$$

$$m_{\text{MnO}_2} = 0,375 \cdot (55 + 32) = 32,625 \text{ г} \quad m_{\text{HCl}} = 1,5 \cdot 36,5 = 54,75 \text{ г}$$

$$m_{\text{HCl}} = \frac{54,75 \cdot 100\%}{35,2} = 155,54 \text{ г} \quad V_{\text{HCl}} = \frac{m}{\rho} \quad V_{\text{HCl}} = \frac{155,54}{1,18} = 131,81 \text{ мл}$$

Ответ: $m_{\text{MnO}_2} = 32,625 \text{ г}$, $V_{\text{HCl}} = 131,81 \text{ мл}$, $\text{Me} - \text{Cu} \quad 105$



2.58